



# UNITED STATES PATENT AND TRADEMARK OFFICE

*pgw*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,394	01/21/2004	Tomonori Nishino	HITA.0497	1303

7590 08/23/2006

Stanley P. Fisher  
Reed Smith LLP  
Suite 1400  
3110 Fairview Park Drive  
Falls Church, VA 22042-4503

EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/760,394

Applicant(s)

NISHINO ET AL.

Examiner

Thoi V. Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 ~~is~~/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 ~~is~~/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 07, 2006 has been entered.

Accordingly, claim 1 was amended. Currently, claims 1-3 are pending in this application.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Fig. 1 fails to show "a plurality of drain lines DL which extend in the Y direction and are arranged in parallel in the X direction in the pixel region AR except at an edge of the pixel region AR " as described in the specification amended on June 07, 2006. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office

action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (Kubo, US 6,710,827 B2) in view of Nagano et al. (Nagano, US 6,912,034 B2).**

As shown in Figs. 1 and 2, Kubo discloses a liquid crystal display device comprising a first substrate 20 (TFT substrate) and a second substrate 40 (color filter substrate) which are arranged to face each other with a liquid crystal layer 30 therebetween, wherein the first substrate 20 includes a plurality of gate lines 2 which extend in a first direction (horizontal direction in Fig. 1), a plurality of drain lines 7 which extend in the second direction (vertical direction in Fig. 1) and holding capacitance lines 15 which extend in the first direction, wherein

a pixel and a switching element TFT 25 are provided to a region which is surrounded by two neighboring gate lines 2 out of the plurality of gate lines and two neighboring drain lines 7 out of the plurality of drain lines as shown in Fig. 1,

the pixel includes a light transmitting region which allows light incident from a back surface of the first substrate to pass therethrough and a light reflecting region

Art Unit: 2871

which allows light incident from the second substrate side to be reflected thereon as shown in Fig. 1 (col. 1, line 39 through col. 2, line 5),

the light transmitting region includes a first pixel electrode 9 (transparent electrode) having the light transmitting property and the light reflecting region includes a second pixel electrode (reflection electrode) having the light reflecting property (col. 6, lines 9-15), and

an insulation film 11 and a holding capacitance electrode which is connected to one of the holding capacitance lines 15 are provided below the second pixel electrode 12 (col. 7, lines 5-10), and

the holding capacitance electrode is formed on the same layer as the gate line 2 and is formed of a material having a light shielding property (col. 6, lines 46-50).

Re claim 3, Kubo discloses a liquid crystal display device comprising a first substrate 20 and a second substrate 40 which are arranged to face each other with a liquid crystal layer 30 therebetween, a plurality of gate lines 2 which are arranged in parallel the first substrate, and a plurality of drain lines 7 which are arranged to cross respective gate lines 2 of the plurality of gate lines and are arranged in parallel as shown in Fig. 1, wherein

regions which are surrounded by the gate lines and the drain lines constitute pixel regions, and each pixel region includes a switching element TFT 25 which is operated in response to a scanning signal applied from the gate line 2 and a pixel electrode 14 to which a video signal is supplied from the drain line 7 through the switching element as known in the art (col. 6, lines 4-19),

the pixel electrode is constituted of a first pixel electrode 9 formed of a light transmitting conductive layer which is disposed in one light transmitting region defined in the pixel region and a second pixel electrode 12 formed of a non-light transmitting conductive film which is disposed in another light reflecting region defined in the pixel region (col. 6, lines 4-19),

an insulation film 11 is formed above the first pixel electrode 9 and an opening which allows the first pixel electrode 9 to be exposed is formed in a region of the insulation film corresponding to the light transmitting region (Figs. 1 and 2 and col. 7, lines 11-26),

the second pixel electrode 12 is formed over the light reflecting region of the insulation film (col. 7, lines 11-26), and

a holding capacitance electrode 15 is formed on the same layer as the gate line 2 and the holding capacitance electrode is formed of a material having a light shielding property (col. 6, lines 46-50).

Kubo discloses a liquid crystal display device that is basically the same as that recited in claims 1 and 3 except for the holding capacitance electrode extending in the second direction (parallel with the drain line) and being formed in an overlapped manner to a boundary portion between the light transmitting region and the light reflecting region (or being arranged at a portion corresponding to a side wall surface of the opening of the insulation film).

As shown in Fig. 6, Nagano discloses a liquid crystal display device comprising a holding capacitance electrode 9 having a light shielding film 25 extending in parallel with

Art Unit: 2871

the drain line 4 and being formed in an overlapped manner to a boundary portion between a first pixel electrode 1 and a second pixel electrode 2 for preventing light leakage (col. 10, lines 7-18). Fig. 2 of Nagano also shows that a light shielding film 8, which is the same as the light shielding film 25, is formed on the same layer as the gate line 3.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Kubo with the teaching of Nagano by forming the holding capacitance electrode extending in the second direction (parallel with the drain line) in an overlapped manner to a boundary portion between the light transmitting region and the light reflecting region in order to prevent light leakage caused by alignment disorder of liquid crystal (col. 1, lines 7-11 and col. 10, lines 13-18).

**6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubo et al. (Kubo, US 6,710,827 B2) in view of Nagano et al. (Nagano, US 6,912,034 B2) as applied to claims 1 and 3 above and further in view of Sasano et al. (Sasano, USPN 5,671,027).**

The liquid crystal display device of Kubo in view of Nakano includes all that is recited in claim 2 except for a holding capacitance formed by way of an anodized film formed over the holding capacitance electrode.

As shown in Fig. 2B, Sasano discloses a liquid crystal display device comprising a holding capacitance Cadd formed by way of an anodized film AOF formed over a holding capacitance electrode PL1 (col. 11, lines 46-55).

Art Unit: 2871

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Kim with the teaching of Sasano by forming a holding capacitance by way of an anodized film formed over the holding capacitance electrode in order to improve an open ratio of the display (col. 6, lines 53-55).

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi V. Duong



8/17/2006